Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-5 (canceled)

6. (currently amended) The culture system of claim ~~1~~ 56, wherein the through bore of the fluid connector is intersected by a through bore of a second fluid inlet.

7. (currently amended) The culture system of claim ~~1~~ 56, further comprising at least one penetration port extending through a wall of the first or second culture compartment.

8. (currently amended) The culture system of claim ~~1~~ 56, further comprising a gas venting means for allowing gas to escape from the first or second culture compartment as the compartment is filled with fluid.

9. (currently amended) The culture system of claim ~~1~~ 56, further comprising a fill means for inserting fluids into or removing fluids out of the first or second culture compartment.

10. (currently amended) The culture system of claim ~~1~~ 56, wherein the first end, the distal end and the fluid connector are concurrently rotated by a drive assembly.

11. (currently amended) The culture system of claim ~~1~~ 56, wherein the second culture compartment has a greater volume than the first culture compartment.

12. (currently amended) The culture system of claim ~~1~~ 56, further comprising an identifier.

13. (original) The culture system of claim 12, wherein the identifier is a bar code.

14. (previously presented) A culture system comprising:

(a) a fluid inlet;

(b) a first culture compartment having

(i) a fluid-impenetrable tubular sleeve having a first end and an opposed second end,

(ii) a growth compartment within the sleeve, and

(iii) a first end piece having one side attached to the fluid inlet and a second side attached to a first end of the tubular sleeve;

(c) a second culture compartment coaxial with the first culture compartment, the second culture compartment having

(i) a fluid-impenetrable housing having a proximal end and a distal end; and

(ii) a growth compartment within the housing that is in fluid communication with the growth compartment within the sleeve,

(d) a fluid connector having a first side mounted on the second end of the tubular sleeve and a second side mounted on the proximal end of the housing, the fluid connector having a through bore passing from the first side to the second side of the fluid connector wherein the through bore is in fluid communication with the growth compartment of the first and second culture compartment;

(e) a connector filter having a one end supported by the first side of the fluid connector;

(f) a membrane carrier assembly transversing the second culture compartment comprising

(i) a support cylinder,

(ii) a molecular weight cut-off membrane secured to an exterior surface of the support cylinder, and

(iii) a chamber between the exterior surface of the cylinder and an interior surface of the membrane, the chamber in fluid communication with the through bore of the fluid connector and the growth compartment within the housing;

(g) a fluid outlet; and

(h) a distal end piece mounted on the distal end of the second culture compartment and connected to the fluid outlet.

15. (previously presented) The culture system of claim 14, wherein the connector filter includes a molecular weight cut-off membrane.

16. (previously presented) The culture system of claim14, wherein the connector filter includes:

a cylindrical support transversing the first culture compartment, the support having a first end supported by the first end of the sleeve and a second end supported by the first side of the fluid connector;

a molecular weight cut-off membrane secured to an exterior surface of the cylindrical support, and

a channel between the exterior surface of the cylindrical support and an interior surface of the membrane, the channel in fluid communication with the through bore of the fluid connector and the growth compartment of the first and second culture compartment.

17. (previously presented) The culture system of claim 15, wherein the connector filter includes a molecular weight cut-off membrane having a different molecular weight cut-off than the molecular weight cut-off membrane of the membrane carrier assembly.

18. (previously presented) The culture system of claim 15, wherein the molecular weight cut-off membrane of the connector filter is identical to the molecular weight cut-off membrane of the membrane carrier assembly.

19. (previously presented) A culture system comprising:

(a) a fluid inlet;

(b) a first culture compartment having a tubular housing;

(c) a first end piece attached to the fluid inlet on one side and to a first end of the tubular housing on a second side,

(d) a second culture compartment coaxial with the first culture compartment, the second culture compartment having a proximal end and a distal end;

(e) a fluid connector having a first side mounted on a second end of the tubular housing and a second side mounted on the proximal end of the second culture compartment, the fluid connector having a through bore passing from the first side to the second side of the fluid connector, wherein the through bore directs a fluid stream from the first culture compartment into the second culture compartment;

(f) a connector filter positioned on the first side of the fluid connector to filter a fluid stream passing out of the first culture compartment and into the through bore of the fluid connector;

(g) a fluid outlet;

(h) a distal end piece mounted on the distal end of the second culture compartment and connected to the fluid outlet; and

(i) an outlet filter transversing the second culture compartment including:

a support cylinder having a first end supported by the fluid connector and a second end supported by the distal end piece,

a molecular weight cut-off membrane secured to an exterior surface of the support cylinder, and

a chamber between the exterior surface of the cylinder and an interior surface of the membrane, the chamber in fluid communication with the through bore of the fluid connector and the fluid outlet.

Claims 20-55 (canceled)

56. (new) A culture system comprising:

(a) a fluid inlet;

(b) a first culture compartment having a tubular housing made of a fluid-impenetrable material, wherein the tubular housing has a first end and an opposed second end;

(c) a first end piece attached to the fluid inlet on one side and to the first end of the tubular housing on a second side,

(d) a second culture compartment coaxial with the first culture compartment and in fluid communication with the first culture compartment, the second culture compartment having a proximal end and a distal end;

(e) a fluid connector having a first side mounted on the second end of the tubular housing and a second side mounted on the proximal end of the second culture compartment, the fluid connector having a through bore passing from the first side to the second side of the fluid connector;

(f) a connector filter having a first end and a second end, wherein the first end is mounted on the first side of the fluid connector, the connector filter positioned to filter a fluid stream passing out of the first culture compartment into the through bore of the fluid connector and into the second culture compartment;

(g) a fluid outlet;

(h) a distal end piece mounted on the distal end of the second culture compartment and connected to the fluid outlet; and

(i) an outlet filter having a one end mounted on a proximal side of the distal end piece, wherein the outlet filter is a membrane carrier assembly transversing the second culture compartment wherein the membrane carrier assembly has:

a support cylinder;

a molecular weight cut-off membrane secured to an exterior surface of the support cylinder, and

a chamber between the exterior surface of the cylinder and an interior surface of the membrane, the chamber in fluid communication with the through bore of the fluid connector and the fluid outlet.